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News Bulletin of The Entomological Society of Victoria Inc.

THE ENTOMOLOGICAL SOCIETY OF VICTORIA (Inc)

MEMBERSHIP

Any person with an interest in entomology shall be eligible for Ordinary membership. Members of the Society inelude professional, amateur and student entomologists, all of whom receive the Society's News Bulletin, the Victorian Entomologist.

OBJECTIVES

The aims of the Society are:

(a) to stimulate the seientific study and discussion of all aspects of entomology,
(b) to gather, disseminate and record knowledge of all identifiable Australian insect speeies,
(c) to compile a comprehensive list of all Vietorian insect species,
(d) to bring together in a congenial but scientifie atmosphere all persons interested in entomology.

MEETINGS

The Society's meetings are held at room AG17, La Trobe University Carlton Campus, 625 Swanston Street, Carlton, Melway reference Map 2B E10 at 8 p.m. on the third Friday of even months, with the possible exception of the Deeember meeting which may be held earlier. Leetures by guest speakers or members are a feature of many meetings at whieh there is ample opportunity for informal diseussion between members with similar interests. Forums are also conducted by members on their own particular interest so that others may participate in discussions.

SUBSCRIPTIONS

Ordinary Member	$20.00
Country Member	$16.00 (Over 100 km from GPO Melbourne)
Student Member	$12.00
Associate Member	$ 5.00 (No News Bulletin)

No additional fee is payable for overseas posting by surface mail of the news bulletin. Associate Members, resident at the same address as, and being immediate relatives of an ordinary Member, do not automatically receive the Society's publications but in all other respects rank as ordinary Members.

Cover design by Alan Hyman.

Cover illustration of *Synlestes weyersii tilyardi* (O.: Synlestidea) ♂ by Catherine Symington.

MINUTES OF THE GENERAL MEETING, 21 FEBRUARY 1996

The President, A. Kellehear, opened the General Meeting at 8.10 pm

Present: P. Carwardine, D. Dobrosak, I. Endersby, A. & E. Farnworth, E. Grey, A. Kellehear, T. New, R. Vagi.

Visitors: A. Dobrosak.

Apologies: D. Crosby, D. & J. Holmes.

Minutes: Minutes of the 13 December General Meeting [*Vic. Ent.* 27(1):1-2] were passed. (I. Endersby/D. Dobrosak).

Treasurer's Report:

The Treasurer reported that the Society's accounts were as follows: General Account: $4,804, Le Souëf Award Account: $3,359. Membership: 98.

Editor's Report:

The Editor reported that enough articles were in hand for the next issue of *Victorian Entomologist* but articles were still required for future issues of the news bulletin. The incorrect listing of the Immediate Past President on the inside back cover would be corrected and the new textured cover of *Victorian Entomologist* received favourable comment.

Correspondence:

- Society for Insect Studies Circular No 59.
- Viridans Biological Databases.

Speaker:

Dr. Tim New, a recognised authority on the Neuroptera, presented a concise and informed presentation on the biology of the Australian Neuroptera including detailed information on the life histories of the various Neuropteran families together with some background into the evolution and fossil history of the order.

Dr. New was able to demonstrate the amazing biology of this order and the parallels with other insect orders e.g. the Ascalaphidae (owlflies) bear a remarkable physical resemblance to the odonata and the Ascalaphidae adults are also predatory, hunting insects in flight. Similarly the Mantispidae (mantisfly) physically resemble the Mantids and have the characteristic raptorial forelegs similar to praying mantids.

A detailed account was given of the number of families in the different biogeographical regions of Australia i.e. the Torresian, Eyrean and Bassian areas. The conclusion proposed was that, in general, the Bassian region have close relatives in other Gondwanaland areas and are generally older in an evolutionary context.

The speaker elaborated on the uses of Neuroptera particularly the common *Micromus tasmaniae*, larvae of which are predatory on aphids and bugs. It seems Neuroptera can be attracted to crops by spraying them with a readily available yeast extract thinned with water to the constancy of thin brown onion soup. The yeast mixture is a food source for the larvae and keeps the larvae on the crops ready to attack the insect pests.

Dr. New ably supported up his presentation with an excellent series of colour slides and overheads.

General Business:

New member: L. Hunt was elected to membership of the Society.

CAE course: Three applications for the Society's Introduction to Insects course were received. Unfortunately a minimum of seven were required, therefore the course will not proceed.

Le Souëf Award Certificate: D. Dobrosak showed the meeting Mr R. Hunt's Le Souëf Award certificate which would be signed by the President and Secretary and mailed to Mr Hunt.

The meeting was closed by the President at 9.41 pm.

NOTICE OF ANNUAL GENERAL MEETING

Members of the Society are advised that the Annual General Meeting will be held at the La Trobe University Carlton Campus, Room AG17, 625 Swanston Street Carlton, commencing at 8 p.m. on Friday 20 June 1997.

AGENDA

1. Approval of minutes of AGM held on 21 June 1996
2. Treasurer's Report
3. Editor's Report
4. Reports from Committees
5. Election of Council for 1997-98
6 Expression of interest for joining ENTRECS and Conservation Committees
7. Presidential Address
8. General Business

Nominations for positions on the Council, in writing and signed by the proposer, seconder and nominee, must be in the hands of the President seven days prior to the Annual General Meeting. Nomination forms and Proxy forms may be obtained from the Secretary.

THREE *MELOBASIS* SPECIES (BUPRESTIDAE) REARED FROM *ACACIA SOPHORAE* (MIMOSACEAE) FROM SAINT MARGARET ISLAND, SOUTH GIPPSLAND, VICTORIA

Ian Faithfull, Keith Turnbull Research Institute,
Department of Natural Resources and Environment,
PO Box 48, Frankston, Vic., 3199

Abstract

Three species of *Melobosis* Laporte & Gory (Buprestidae), *M. nervosa* (Bosiduval), *M. purpurascens* (Fabricius) and *M. ?simplex* (Germar) were reared from a single collection of sticks and branches of Coast Wattle, *Acacia sophorae* (Labill.) R.Br. (Mimosaceae) from Saint Margaret Island, South Gippsland, Victoria. *M. nervoso* emerged mainly from August to October over a period of three years. The single *M. ?simplex* emerged after 2 years and the single *M. purpuroscens* emerged after 1 year. Host records of *Melobosis* are discussed.

Observations

A fallen small tree of the Coast Wattle, *Acocio sophoroe* (Labill.) R.Br. (Mimosaceae, syn. *Acocia longifolia* var.*sophoroe*), newly dead and severely under attack by larval Coleoptera, was found in *Eucalyptus viminolis* Labill. woodland about 20 m from the beach on Saint Margaret Island, 1.75 km NNE of Manns Beach, South Gippsland, Victoria (38°38'07", 146°48'52"), on 27 September 1990. Sticks and branches of this plant between 13 and 55 mm in diameter, with a total length of 1.34 m and with a total weight of 726 g (as of January 1994: i.e. after 3.3 years of drying out and removal of frass, wood dust, etc.) were collected. These were kept indoors in a living room in a sealed plastic bag enclosed in another plastic bag until March 1994, when the remaining material was broken up and found to contain no further buprestids. The insects which emerged were preserved. Specimens have been deposited at the Museum of Victoria.

Three species of *Melobasis* Laporte & Gory (Buprestidae) emerged from this wood: *M. nervoso* Boisduval (34 adults, plus 14 larvae, possibly all this sp.), *M. purpuroscens* Fabricius (1 adult), and a species tentatively identified as *M. simplex* Germar (1 adult) (but close to *M. wotkinsi* Levey) by comparison with material in the Museum of Victoria. *M. watkinsi* is not known from Victoria (Burns and Burns 1992).

The single *M. purpuroscens* emerged between 13 November and 9 December 1991. The single *M. ?simplex* emerged between 29 August and 7 September 1992. Assuming that eggs or young larvae were present when the wood was collected this data indicates a development period of about 1 year for *M. purpurascens* and about 2 years for *M. ?simplex*.

M. nervosa continued to emerge over a three year period. Twelve emerged within 11 to 13 months, a further 20 emerged between 20 to 26 months after the date of the field collection, and two more emerged after about 36 months. It is conceivable that adults mated and oviposited in the sealed plastic bags in which the timber was kept, but it is likely that adults need to feed on nectar and require stimuli not available in the enclosed environment in order to mate and oviposit. Larvae which dropped from the timber were observed to feed on, or at least chew up, the green dyed newspaper (*The Age* Green TV Guide) in which the *Acacia* branches were wrapped. They, and probably also the adults, gnawed holes in the inner plastic bag. Adults emerged mainly from August to October, that is from late winter to mid spring, 12 during 1991, 20 during 1992 and 2 during 1993:

27 September 1990	:	Host plant collected
25 August-18 September 1991	:	1
18-30 September 1991	:	1
30 September-4 October 1991	:	6
5 October 1991	:	2
7-25 October 1991	:	2
20 May-7 June 1992	:	2 (dead)
24 July-17 August 1992	:	1
17-29 August 1992	:	4
29 August-7 September 1992	:	5
7-14 September 1992	:	1
14-25 September 1992	:	3
14-26 October 1992	:	1
26-31 October 1992	:	1
31 October-1 November 1992	:	1
6-29 November 1992	:	1
31 August-22 September 1993	:	2

On 22 September 1993 one adult flew to light after the bags were opened. When picked up, it released a brown fluid from its mouth, not strongly scented, and in quantity enough to cover 2.5 x 3.0 mm of skin. At the same time it bit into my skin and hung on tightly with its mandibles. It bit again when transferred between fingers, but no further fluid was released. This defensive reaction was noted only with this specimen.

Several other insects emerged from the wood, including primary wood feeders and probable buprestid parasites. The probable parasites included a female doryctine Braconid (emerged 14-25 October 1990), a small ichneumonid (emerged October 1992) and several small Diptera.

The presumed wood feeders included three species of Coleoptera: a small curculionid (emerged December 1990) a 3 mm ?colydiid (emerged 13 November-9 December 1991), and a *Rhinophthalmus*-like cerambycid (emerged 12-30 December 1991). Noises emerging from the timber: a flick-like click, 2 per second, repeated at regular intervals of 2 to 10 seconds, are probably attributable to the cerambycid: the noises were not recorded after its emergence and longicorns frequently produce such sounds.

Discussion

Turner and Hawkeswood (1994) summarised the known larval host plants for Australian *Melobasis* species. Larval hosts of *M. sexpalagiata* and *M. simplex* have apparently not previously been recorded. *Acacia sophorae* was identified as a larval host of *M. purpurascens* by Hawkeswood (1992) who suggested it was probable that the species has a preference for phyllodinous acacias.

In addition to the published *Melobasis* larval host records cited by Turner and Hawkeswood (1994) there are a number of other records which indicate host associations.

Van den Berg (1982) found a larva of *Melobasis obscurella* Thomson (as *M.rotundicollis* Blackburn) boring in the woody stem of Black Wattle, *Acacia mearnsii* De Wild.

Wilson (1936) recorded that he cut a dead, "almost perfect" adult *Melobasis abnormis* Carter out of the trunk of a sandalwood tree, one of a small patch growing on the shores of Lake Crosby, in the Pink Lakes district north of Linga, Victoria, in October 1922. The true sandalwood *Santalum lanceolatum* R.Br.(Santalaceae) is of very restricted occurrence in Victoria (Willis 1972, Costermans 1983) and it is likely that the tree was a sweet quandong, *Santalum acuminatum* (R.Br.)A.DC. The beetle may have died before emergence from its host, entered the wood to oviposit, or have sought refuge in an existing tunnel in the wood. Examination of the specimen, if it still exists, might provide enlightenment.

Goudie (1920) recorded five *Melobasis* species from the Birchip and Sea Lake districts of Victoria and noted that they are "found on acacias and other small shrubs, and on eucalypt blossoms". Goudie recorded that *M. purpusacens* (Fabricius) (as *M. splendida* Donovan) was taken only on "the Turpentine or Robin-bush, *Beyeria viscosa* (?), in this district", suggesting that this plant may be another larval host for this species. However *B. viscosa* (Labill.) Miq. is not recognised from this region of Victoria (Willis 1972, Costermans 1983). The plant to which Goudie referred was most probably *B. lechenaultii* (DC.) Baill., the Pale Turpentine Bush (Euphorbiaceae).

It is not known if adult *Melobasis* species generally feed on the plants in which their larvae develop, however there are indications that this may be the case (see e.g. Hawkeswood and Turner 1994 and Turner and Hawkeswood 1994). *Acacia sophorae* flowers from July to October (Costermans 1983) so the emergence of *M. sexplagiata* (mainly from August to October) coincided with the availability of pollen, nectar and floral parts of the larval host. Adult *Melobasis* are "often attracted to flowers of legumes" including those of Mimosaceae (Turner and Hawkeswood 1994). Hawkeswood (1981) recorded three species of Buprestidae, *Cisseis scabrosula* Kerremans, *Agrilus australasiae* Laporte & Gory and *Cisseis* sp. from the stems and leaves of *Acacia sophorae* near Coffs Harbour, New South Wales. *C. scabrosula* were observed mating on the stems and branch tips and eating the leaves and *A. australasiae* ate leaves in the laboratory. Williams and Williams (1983) provided information on the host plants of adults of eight species of *Melobasis* but no information on larval hosts. It was noted (Williams and Williams 1983 p.90) that the adults of some species appear to be restricted to Fabaceae and that *Melobasis* in general "may readily be found on *Acacia*". Carter (1933 p.159) for instance found *Melobasis picticollis* Carter "on the wattles" in the Woodend or Mount Macedon areas of Victoria, while Van den Berg (1982) recorded *M. rotundicollis* Blackburn feeding on a flower of *Acacia dealbata* Link. and an unidentifed *Melobasis* species feeding on flowers of *Acacia longifolia*.

It would appear to be unusual for three buprestid species of the same genus to occupy the same niche. No evidence was gathered on partitioning of the resource which might facilitate their coexistence. Do the three species attack *Acacia sophorae* at different periods during its senescence? Or do the larvae of each species develop in different parts of the stems, or in stems of different diameters?

Burns and Burns (1992) detailed the distributions of Victorian Buprestidae.
M. nervosa is not commonly collected and is known only from the south eastern quarter of the state: in the Melbourne region and Gippsland, despite its presence in South Australia. *M. purpurascens* is one of the commonest Victorian species of *Melobasis*, known from all regions except the Mallee and north central. *M. simplex* is rather rare with only three records, from the west of the State, but I have, additionally, collected it at Yarra Bend in Melbourne.

Burns and Burns (1992) also gave the flight periods of Victorian buprestids. The flight period of *M. nervosa* is July to March, so the emergence period recorded here, mainly late August to early October, is well into the flight period. The flight period of *M. purpurascens* is November to March, so the single specimen emerged at the beginning of the flight period; and that for *M. simplex* is November and December so the emergence here recorded is considerably earlier than the known flight season.

Acknowledgements

The collection was part of a fauna survey of the islands of the Nooramunga Marine and Coastal Park by the Fauna Survey Group of the Field Naturalists Club of Victoria for the then Victorian Department of Conservation and Environment. Thanks are due to members of both organisations for enabling aceess to the Island. The Department is thanked for permission to collect. K.Walker enabled access to the Museum of Victoria collection where the specimens referred to are housed. T.Hawkeswood provided literature references.

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NEW DISTRIBUTION RECORDS AND NOTES FOR *OPODIPHERA LORANTHI* (Luc.) LEPIDOPTERA: SATURNIIDAE

D.A. Lane, 3 Janda St., .Atherton Q. 4883
D.N. Wilson, P.O. Box 554, Palmerston N.T. 0831
C.E. Meyer, 10 Anne Clark Ave, Nicholls ACT 2913

Abstract

Opodiphera loranthi (Luc.) is recorded from the Northern Territory, and comparison made with Queensland populations.

Introduction

O. loranthi has recently been collected by the authors at Howard Springs, N.T. during April 1993 and April 1995. Adults came to light, and were almost certainly breeding on clumps of mistletoe (*Amyema* sp., Loranthaceae) growing high on numerous Eucalypt species in the general area. *Amyema* is the recorded hostplant from eastern Australia.(Common 1990).

The previously known distribution of this species extended from Cooktown, north Queensland to Mt. Keira, central New South Wales (Common 1990). These records confirm the presence of this species in the northern part of the Northern Territory, and give rise to speculation of a much wider distribution across northern Australia.

Discussion

In north east Queensland, *O. loranthi* has been bred or collected at light by the authors from several localities, including near Atherton and Dimbulah on the Atherton Tablelands, near Chillagoe, and from an area 96 km west of Bowen, near the Bogie River. Hostplants have always been mistletoe (*Amyema* sp.) at these localities. Specimens from these northern populations show some differences from specimens from south east Queensland populations (Toowoomba, Leyburn - D. Lane coll.), principally in the size and brightness of the eyespots. In northern populations, eyespots are consistently larger and brighter than those from the south - distinguishable enough to allow separation of populations without reference to label data. Specimens from the Northern Territory conform with north east Queensland populations.

Northern Territory fauna

The presence of *O. loranthi* in the Northern Territory brings the number of saturniid species known from this area to five species:

Opodiphthera eucalypti (Scott), *O. loranthi* (Luc.), *O. excavus* Lane, *Syntherata janetta* (White), and *Attacus wardi* Rothschild (Common 1990, Peigler 1994, Lane 1995).

Further collecting is extremely important to give a better understanding of the biologies, distribution and species level of the Northern Territory fauna.

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EXPANSION OF RANGE OF *HYPOCHRYSOPS BYZOS* (LYCAENIDAE) NEAR MELBOURNE

By Michael F. Braby

In the Melbourne region *Hypochrysops byzos*, a small, exquisite lycaenid butterfly, was, until relatively recently, known only from the montane tall open-forests of the Dandenong Ranges in the outer eastern suburbs. A few years ago, however, I reported on its occurrence in the lower Yarra Valley in the outer north-east (Braby 1991). The species was found breeding at three discrete lowland sites, *viz.* Christmas Hills, St. Andrews and Warrandyte (Fig. 1), all located in riparian habitats where the larval food plant, *Pomaderris aspera*, grows.

H. byzos is well known for its temporal population fluctuations (Waterhouse 1932; McCubbin 1971) and comment was made as to whether the newly recorded sites near Melbourne represented temporary or transient colonies which had dispersed along suitable vegetation corridors, such as creeks, from nearby mountain source areas, or comprised resident or permanent populations which had previously been overlooked from the outer north-eastern suburbs. During the 1995-96 season I checked two sites (St. Andrews, Christmas Hills) and the following season the third site (Warrandyte) and found that the species was still extant in these areas. In fact, the 1995-96 season seemed to be particularly good as the species was very abundant at the two localities, as well as in several other parts of the range in Victoria. Clearly, *H. byzos* had survived for at least ten years in the lower Yarra Valley, adding evidence in favour of the second hypothesis that the species was resident in the district.

On 28th December 1996, as I was about to dive into my parents' swimming pool at Eltham (21 Cromwell St.), I noticed a rather tattered-looking *Hypochrysops* floating on the water surface. As I 'fished' it out I was quite amazed to discover that it was a female *H. byzos* and still alive! How could this be I asked myself? Was someone playing a trick? Where had this lonely thirst-driven Jewel come from? The species was unknown from Eltham, and I certainly had never seen it in the garden over the past 15 years.

There were, however, three large shrubs (3-4 m high) of *P. aspera* in the garden which I planted out as seedlings eight years ago and, still in bathers, I immediately began to check the foliage for clues. Within minutes I found numerous eggs, first instar larvae and two empty pupal shells on one bush. I then checked the two other plants and was rewarded with similar success; a few hours later the first adults were seen. *H. byzos* had invaded the garden and was breeding. But where on earth had they come from? The colony could not have been present for very long and the food plant did not occur naturally in the immediate area. Indeed, the garden could at best be described as degraded bushland comprising Yellow Box open-forest situated on a dry northern slope, a most unlikely habitat for *H. byzos*.

There was only one possibility. The nearest source of indigenous *P. aspera* was along the nearby Diamond Creek. The creek, which drains the Great Dividing Range at Kinglake, eventually flows into the Yarra River. Since *H. byzos* was known from the higher rainfall areas at Warrandyte, some 18 km upstream on the Yarra River, and at St. Andrews, some 30 km upstream on the Diamond Creek, it was conceivable to imagine that the butterfly had dispersed along either of these river systems to Eltham.

On 2nd January 1997 I decided to make an intensive search for further colonies along the Diamond Creek at Eltham. I first investigated areas near the railway line, and after some effort (and nearly stepping on a large Tiger Snake!) managed to find one large remnant *P. aspera* tree. Much of the creek in fact was badly infested with a host of undesirable weeds, e.g. Willow, Blackberry, Wandering Jew, Hawthorn, to name just a few, and there was no evidence of the early stages of the butterfly. I then checked Wingrove Park. This time six young healthy trees were located, however, these appeared to have been planted by the local council, who have been responsible in recent years for planting many indigenous plants in the area. To my delight all these plants too had been colonised, containing numerous *H. byzos* eggs and one empty pupal shell. Some distance further downstream at Eltham Lower Park I came across one large indigenous *P. aspera*, a majestic tree about 6-7 m high. After some searching several eggs were eventually located near the canopy and a few males were observed and procured. Curiously, a colony of *Hypochrysops delicia* was discovered breeding right next to the tree and several fine females were secured! No other *P. aspera* trees were surveyed but clearly the butterfly was well established along parts of the lower Diamond Creek at Eltham (Fig. 1). For how long is difficult to say, but based on these limited field observations I would conclude that the colony in the garden had arisen from dispersal from the Diamond Creek, the nearest and most likely source being Wingrove Park, about 1 km south-east of Cromwell Street.

Since the adults are rarely seen I make the following notes on their behaviour. Both sexes were active only during sunny periods in the afternoon. Females were usually observed for a brief period around or soon after midday. They spent much of the time crawling over the leaves and stems in the lower half of the food plant searching for suitable oviposition sites; when laying they would invariably hang upside down beneath a leaf to deposit a single egg. After oviposition they would often walk to a sunny spot on the plant for a few minutes and sunbask, with their backs oriented towards the sun and wings opened at no more than 90°. The oviposition behaviour confirmed the distribution of eggs observed at the thee locations at Eltham. Examination of over one hundred eggs revealed that nearly all were laid singly on the underside of leaves. Only one leaf contained two eggs which had been deposited together; another leaf contained three eggs but these were widely dispersed and had been laid separately. Only two eggs were found on stems, both on terminal branches close to new soft developing leaves. Males were observed to fly later in the afternoon, around 2.00-4.00 pm E.S.T. They also confined themselves close to the food plant but would settle towards the top of the plant. Here they appeared to establish mating territories. Often two rival males would be seen chasing each other in fast upward spiral flights, returning to the same spot to resume their perching posture. The perching sites included a prominent leaf or inflorescence situated about 0.5-1.0 m from the very top of the plant, and once settled the males would sunbask with the wings opened at 45-90° facing the mid to late afternoon sun.

In conclusion, the presence of *H. byzos* in the garden at Eltham clearly demonstrates that, despite apparent localised and sedentary habits, females disperse some distance in order to colonise new areas. Once away from the main breeding habitat, in this case the Diamond Creek, they are capable of locating new food plants and, once those plants have been located, are capable of laying enough eggs to establish a new subpopulation or metapopulation. The cues used in tracking new potential hosts by females must be formidable indeed and would make fascinating study. No doubt such spatial expansions of range follow the high population densities which occur from time to time, and it is interesting to note that the preceding season seemed to be a particularly good one for the butterfly in terms of the relatively high numbers recorded. It will be interesting to see how long the colony persists in the garden. Three trees seems ridiculous to consider it in any way viable in the long term, despite large numbers of the early stages. No doubt the parasites will soon catch up and take over, unless of course the colony is continually replenished from nearby source areas.

The observations amply show the value of planting indigenous plants in fostering urban wildlife, and the Nillumbik (formerly Eltham) council must be commended for its initiative in this respect. *H. byzos* may well be widespread and established in other areas of the lower Yarra Valley where suitable remnant vegetation remains. With increased efforts over the last decade to bring back native flora and wildlife to the suburbs let's hope that this beautiful butterfly is here to stay and will be found elsewhere in the Melbourne environs where *Pomaderris* has been planted.

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Fig. 1. Distribution of *Hypochrysops byzos* in the lower Yarra Valley near Melbourne.

CORRECTIVE NOTES ON *OCYBADISTES WALKERI* HERON (LEPIDOPTERA: HESPERIIDAE)

Kelvyn L. Dunn
15 Yackatoon Road, Upper Beaconsfield, Vic. 3808

Summary: Variation in the larva head of *Ocybadistes walkeri* Heron is described and comparison is made to literature descriptions. Corrections are made to two earlier communications: a larval host applied to *Telicota* Moore (Dunn 1988) is argued to belong to *O. walkeri*, and in a paper on the range extension of this butterfly in Victoria (Crosby & Dunn 1989) an important omitted early central Victorian record is reported. Also, an inaccurate locality description is emended. Taxonomy follows Nielsen *et al.* (1996).

Dunn (1988) mentioned an undetermined hesperiine larva, reputedly a *Telicota* species, feeding on *Bromus stramineus* Desv. (Poaceae) in Dandenong Vic. in 1978. I have since carefully re-examined the color 16mm footage with aid of a viewer and magnifying lens and confirmed the larval head does not match any preserved *Telicota* larval heads in my collection.

Description of the hesperiine larva found on *B. stramineus*:

> Mature larva pale green. Head pale brown (background straw colored), with vertical, medium width, dark chocolate lateral band running up each side of head to meet in small depression at back (posterior end) of head and continuing narrowly down centre (along coronal sulcus), towards frontoclypeus. Triangular plate (frontoclypeus), situated just above labrum and mandibles, appears to have a central fine vertical black line, and a fine rusty brown mark running down each side (along adfrontal sulcus). Front of head has two broad vertical rusty brown bands finely separated from triangular plate by background color near adfrontal area. Distal edge of frontal band is ragged.

This larval head description seems rather similar to that described for *Suniana lascivia* (Rosenstock) by Common and Waterhouse (1981), but the two frontal bands in the photographed larva are broader than in preserved larval heads of *S. lascivia* in my collection. Incidentally, the mature larval head of *S. sunias* (C.Felder) (from Mutarnee, NQ) is very similar to that of *S. lascivia* (from Narre Warren East, Vict.) and is *not* black with a white band as described by Common and Waterhouse (1981) (under ssp. *nola* (Waterhouse)). The general similarity to *Suniana* gives a clue as to the likely genus in suburban Melbourne - *Ocybadistes* Heron.

It seems unlikely for *S. lascivia* to utilise an introduced grass in residential area given its apparent monophagy, and the fact the species is very localised about the host plants and now rare near Melbourne. *S. lascivia* was recorded at Dandenong by Anderson & Spry (1894) but, today, the nearest known extant population occurs in woodland some five kilometres away. Two other small skippers, *Taractrocera papyria* (Boisduval) and the trapezitine *Dispar compacta* (Butler), both of which I reared from undetermined soft grasses in my parents' garden in Dandenong have very different larval heads to *Suniana*.

Larval heads of *Ocybadistes walkeri* (ssp. *sothis* Waterhouse and *hypochlora* Lower) are clearly illustrated (in color) by Coupar and Coupar (1992) and Fisher (1995) respectively and, taken together, approximate my larva. A useful black and white close up of the head was earlier given by Fisher (1978). In Coupar and Coupar's *sothis* larva both the lateral and frontal bands

are a similar rusty brown color, but the frontal bands are merged to form a central, ragged edged, patch. In addition, the triangular plate has a black inverted 'V'. However, in Fisher's (1995) *hypochlora* larva the two frontal bands are narrow and clearly separated, and the triangular plate is pale. The lateral bands are a darker brown than the frontal bands. Fisher's (1995) larva of *hypochlora* more closely corresponds with my larva except that the frontal bands in his are slightly narrower. Moreover, Fisher's (1978) illustration shows the fine black vertical bar in the triangular plate also present in my larva. The differences noted are presumably variation within the species rather than associated with particular subspecies.

In *O. walkeri*, the frontal bands are variable in width and reddish brown, and the vertical side bands can be a darker brown; but neither band is black - the larval description given for *sothis* by Common and Waterhouse (1972, 1981) seems erroneous. Fisher (1995) has reiterated this, rather than described afresh from his 1995 illustration, or cited his earlier (Fisher 1978), more accurate, description for *hypochlora*. Perhaps describing Tasmanian material, McQuillan (1994) stated that the head is pale brown with darker bands. Finally, the mature larval length of 20mm given by Dunn (1988) agrees with that of Coupar and Coupar (1992) for the species, and the laddered stitching mentioned by Dunn can also be seen in the illustrated shelter in Fisher (1995).

In 1978 *O. walkeri* was not considered a likely candidate partly due to the misleading available description of the *sothis* larva, and because the first adults were not encountered in Dandenong until February 1981 (Crosby & Dunn 1989), at which time they were uncommon, but became abundant the following year. This now authenticated larval record backdates the arrival of the species in Dandenong several years to about the time the species became abundant at Black Rock (Crosby & Dunn 1989). Evidently the larva was progeny of one of the first colonising adults to arrive in the Dandenong valley, although a conspicuous population did not establish for several years.

The introduced grass *B. stramineus*, a native of Chile, which I had incorrectly associated with *Telicota* in Dunn (1988) and somewhat hesitantly in Dunn and Dunn (1991), is proposed as an additional larval host of *O. walkeri*. *B. stramineus* has since been placed as a junior synonym of *B. cebadilla* Steud. (Walsh and Entwisle 1994). The larva of this skipper is now known to utilise at least eight hosts from two families (Dunn & Dunn 1991, this paper). However, as I have not made repeat observations on this grass it seems that *B. cebadilla* is rather infrequently utilised.

Finally, concerning the early appearance of *O. walkeri* in central Victoria, there is a specimen in the MV from Bendigo taken on 2 April 1973 which was omitted by Crosby and Dunn (1989; table 1). For 1973 this record is a significant extension south of Benalla (first recorded in 1984). In the same paper, the locality "Narre Warren North" listed in table 2 (map. ref. point 31) should have read '2 km east of Upper Beaconsfield' (my apologies to David Crosby for these two oversights).

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ETIELLA BEHRII (ZELLER) (LEPIDOPTERA: PYRALIDAE) BRED FROM PODS OF GORSE, *ULEX EUROPAEUS* L. (FABACEAE)

Ian Faithfull, Keith Turnbull Research Institute,
Department of Natural Resources and Environment,
PO Box 48, Frankston, Vic., 3199

A single larva of *Etiella behrii* (Zeller) (Lepidoptera: Pyralidae), the lucerne seed web moth, was collected in a sample of 15 mature green and partially dried, brown pods of gorse, *Ulex europaeus* L. (Fabaceae), at Frankston on 20 December 1996.

During the period of capitivity the larva burrowed into 7 of these pods at their bases, or near the centre close to the line of dehiscence, ate the seeds and left behind deposits of frass. The remaining pods were not damaged. An estimated 19 seeds (based on an average of 2.75 seeds per pod in the 8 pods not attacked) were eaten before the larva pupated, between 25 December and 4 January. Pupation occurred in a few strands of silken web between pods and an adult female emerged on 21 January.

The biology of *E. behrii* has been described by Austin *et al.* (1992). It is found throughout Australia and is an important pest of legume seed crops. In Victoria it is principally a lucerne pest but may damage seed of subterranean clovers and medics (Victorian Plant Research Institute 1971), field peas, and the newer legume crops such as lupins and soy beans. Larval *E. behrii* are oligophagous legume seed predators. Published host plant records comprise 25 species of Fabaceae and 2 species of Mimosaceae (Austin *et al.* 1992). *U. europaeus* is a previously unrecorded host. It is a noxious weed of European origin, widespread in south eastern Australia (Parsons and Cuthbertson 1992). No Australian Lepidoptera which feed on gorse were listed by Common (1990).
Weeds frequently harbour pests. Gorse represents a potential source of *E. behrii* infestations, an additional justification for controlling this weed in agricultural areas. As a minor seed predator of a number of leguminous weeds (Austin *et al.* 1992, Hosking 1995) *E. behrii* is to some extent also a beneficial insect.

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SOFTWARE REVIEW

CD-ROM: 'VICTORIAN BUTTERFLY DATABASE', VIRIDANS BIOLOGICAL DATABASES, BRIGHTON EAST, VICTORIA. NOVEMBER 1996. $120

During December 1996 I had the opportunity to peruse Nigel Quick's personal copy of the Viridans CD (no version number but dated "November 1996"). This is the first CD available on the distribution of Victorian butterflies. Based on the private databases of David Crosby and Nigel Quick and incorporating records supplied by the Museum of Victoria, it represents an independent work from the ENTRECS project of the Entomological Society of Victoria. The CD is mainly an educational tool and is not intended as a field guide. It contains new distribution and life history knowledge of interest to butterfly enthusiasts.

The, user friendly, GUI (Graphical User Interface) based software was tested on a Pentium with an 8x speed CD-ROM unit (the minimum computer configuration required is not specified), and provided a quick response time given the graphics involved. Several sequences of tool selections exposed a minor bug which resulted in the temporary loss of the menu illustrations. As the CD case acknowledges unavoidable errors and omissions which will be corrected in the next version(s), I hope my comments and suggestions for improvement will be of assistance.

The colorful opening screen of the database has as its backdrop the magnified image of the scarlet banded hindwing of the Imperial White, and in keeping with the colors of this species the title is in bright yellow. A large clear menu is activated by big keys which are easy to operate with a mouse. The 'Help' accessory can be accessed throughout the program and homes into the appropriate section from where it was initiated. The species tool bar opens a window with four illustrated species per page. The user can 'page up/down' through the alphabetical species list or enter a genus or common name for searching. The search facility cannot find specific epithets but partial spellings of generic names were found (eg. 'Trap'). Misspellings, however, were not found. I typed 'Tapezites' for *Trapezites* and received the bewildering statement: "Couldn't find... best guess *Suniana lascivia*". At this point there is no return (i.e. no 'Cancel' or 'Try Again' tool) and the 'best guess' is presented! Species taxonomy is up to date, and the common names are usually the familiar ones. I disliked the use of the conservation/status symbols (eg. 'e' for Endangered) which sometimes merge with common names. These should be transferred to the text windows and spelled out in full.

The 'Big Picture' facility displays a full screen image of one or more preserved butterflies of the states' 129 species. Often upper and undersides of both sexes are illustrated. These are usually followed by additional images of live adults and/or immature stages. Virtually all photographs are superb, the color is vibrant and accurate, and the clarity is usually very good. In most cases the specimens selected are excellent quality, but some rare forms such as the museum pair of *Candalides absimilis* (which I personally collected) are, by necessity, based on the limited available material. In a few species where sexes are similar only a single adult is illustrated, but the female of the sexually dimorphic *Appias paulina* has been unjustifiably omitted, and I think a dark form female of *Belenois java* ought to have been included. Five adults have been misidentified; for *Trapezites phigalia* (Image 1) the two males are *T. phigalioides* (based on third subapical spot displacement) and for *T. phigalioides*, image 2 is *T. phigalia*. The two females depicted for *Heteronympha solandri angela* are *H. banksii*.

I was very impressed with the outstanding live photos of both sexes of *Candalides consimilis goodingi*, a rare lycaenid, taken by Nigel Quick near Mount Cannibal. For this species a mature larva and an egg on a flower bud of Elderberry Ash (*Polyscias sambucifolius*) can also be viewed. No captions are provided to explain the content of images. Explanatory text including arrow markers or circles where required could be added to the image through the current 'Photo Credit' tool which presently appends the photographer's name to the screen. Without captions a novice is unlikely to recognise the camouflaged juvenile shelter of *Antipodia*

atralba centred amongst the larval host sedge. For some species there are up to 11 images and a 'Back' tool to see a previous image would be useful.

A pop-up text window provides brief information on the species' life history, lists local larval hosts and details some adult habits. In some instances the biological information is a little inaccurate or contradictory. Blady grass is a native species, not naturalised (see under *Suniana lascivia*). For *Ogyris* sp. aff. *idmo* (Mildura) only a single colony is specified in the text contrary to two plots on the map; a similar case was noted for *Elodina padusa*. In some areas the text needs expansion. For *C. consimilis*, "Adults flying during November and December" is all that is given for its behaviour (they are also present during March). I consider the general presentation of the text window is cramped and needs visual improvements.

The 'Distribution' tool creates full screen maps of Victoria, plotted with 10 minute grid areas. Included is a very useful 'zoom in' facility for focussing on particular regions of interest. A practical innovation is the flexible map overlays which can be changed to one of 13 different profiles, including topography, rainfall, soil type, land use and vegetation. Location plots can also be displayed in color coded time periods aiding recognition of potentially extant or extinct populations. The overlays facilitate matching physico-environmental constraints with distribution. For example, the patchy occurrence of *Acrodipsas cuprea*, a rare Ant Blue species, appears to correlate well with annual rainfall of 1000-1400mm and searching within these isoclines could assist the discovery of additional populations.

Crosby and Quick have recently updated the State micro-distributions by personal survey of many grid squares from which there was previously little or no butterfly information. Data coverage is a major improvement on the 1986 ENTRECS maps, and supplements data in the 1991 National Dunn & Dunn maps. The Viridans maps incorporate field data up to and including 1995, and for one or more species some new localities add significantly to the known distributions (eg. two western Victorian sites for *A. brisbanensis*).

The credits state that 20 percent of data is from the Museum of Victoria, and 40 percent from each of Crosby and Quick. The latter may ambiguously imply the contribution of only their personal field data but other collectors (unacknowledged) have records plotted. For diplomacy, I suggest for future editions that any persons whose field data has been incorporated on one or more of the display maps should be listed as having contributed data to these authors or the project.

The CD opening menu also features the ability to change the default map overlay. This function requires a more obvious 'Return to menu' or 'Exit' facility. In addition, in the Information section, the title pages contain several typographical errors, a dorsal view of a palmdart pupa is labelled as a larva, and some definitions need exacting (eg. migrant cf. vagrant). At the end of this section the inactive 'Next' tool should be deleted or dimmed. Finally, an Area Search appurtenance enables searching of one or more individual grids for the butterfly species recorded. This could be improved by 'click and drag' capacity for rapid selection of a block of grids.

Overall the product is excellent. I recommend the CD to naturalist groups, schools, libraries and anyone keen to learn more about our butterflies. After suggested and invited modifications are made, and as more Victorian data becomes available the butterfly graphic interpretation 'database' will grow comprehensively and become more useful as a scientific tool in biogeography. This first version is an important advance in computerised butterfly distribution work, and if a teacher's guide is attached to later releases it could also serve as a classroom educational kit for children's studies in ecology and animal distribution.

Kelvyn Dunn

RECENT ARTICLES OF INTEREST

Compiled by Ian Faithfull

Cinnabar moth released again at Macks Creek. *Yarram Standard News*, 18 Dec. 1996. Releases of two biological control agents for ragwort, *Senecio jacobaeae*: the cinnabar moth, *Tyria jacobaeae*, reared by students at Yarram Secondary College as part of the Keith Turnbull Research Institute's ragwort school science education project, and the ragwort crown boring moth, *Cochylis atricapitana*, reared at KTRI. [cr. K.Green].

Under Control. Pest Plant and Animal Management News. No. 1, February 1996. Keith Turnbull Research Institute for Integrated Pest Management, Frankston, Victoria (PO Box 48, Frankston, Vic. 3199). Includes articles on weed biological control by insects in Victoria including the ragwort flea beetles, *Longitarsus jacobaeae* and *L. flavicornis*; news on biological control of thistles; an update on releases and establishment of the Paterson's curse weevil, *Mogulones larvatus*; information about the dock (*Rumex*) clearwing moth, *Chamaesphecia doryliformis*; the English broom twigminer moth, *Leucoptera spartifoliella*, released in the Alpine National Park; and the horehound plume moth, *Pterophorus spilodactylus*; plus stories on the Moreton Bay Fig psyllid, *Mycopsylla fici*, which is attacking trees in many of Melbourne's parks; control of the elm leaf beetle, *Pyrrhalta luteola*, in Melbourne using the biological insecticide Novodor; and the demise of the European Wasp research project.

If at first you don't succeed .... The success story of the gall-forming wasp on long-leaved wattle. *Plantbeskermingsnuus/Plant Protection News* (Plant Prot.Res.Inst., Pretoria) No.43, Autumn 1996. The Australian wasp *Trichilogaster acaciaelongifoliae* was released in South Africa in 1981 where *Acacia longifolia* is a weed. It reduces seed production by >95% in most years and kills some plants. Seeds of the *Acacia* have a long life in the soil and germinate after fires. Two fire cycles were needed to assess the affect of the wasp on regeneration of the wattle, the first to deplete the soil seed bank and the second to wipe out the new infestation resulting from the the old seed bank. Studies at a suitable site show that the wasp is causing a decline of the wattle.

Hunt, P., 1997. **Roadblocks aid war on fruit fly.** *Weekly Times* 8 Jan. 1997 p.21. Roadblocks operated by a security company set up north of Wentworth, NSW, and at Hattah and Euston, Victoria, in mid January to restrict imports of Queensland fruit fly to the Sunraysia district and gather information on the sources of infested fruit. Sterile male eradication techniques will be considered if the main infestation sources are small towns outside the exclusion zones. Inspectors in South Australia intercepted 65 tonnes of fruit from motorists from January to November 1996.

Thrip attaks six properties. *Weekly Times*, 8 Jan. p.21. Western flower thrips, *Franklinella occidentalis*, eradication treatments at six commercial nurseries and flower farms in Victoria. Despite training of horticuluralists and quarantine measures, infestations were expected to increase over summer.

Davies, R., 1997. **Attract flutter-by friends.** *Weekly Times* 8 Jan. p.32. Review of Densey Clyne's *How to Attract Butterflies to Your Garden* (Kangaroo Press).

Dalton, S., 1997. **Army worms on the march.** *Weekly Times*, 15 Jan. p.23. One of the worst plagues (presumably of *Mythimna convecta* and *Persectania* spp., Noctuidae) in Victoria for

years. 20,000 ha aerially sprayed in the Western District, not just oats, but wheat, triticale, barley and turnips attacked and milk production affected on dairy farms (stock 'simply go off their food when the worms arrive').

The Orchard Pest and Disease Handbook 1996-1998. Northern Victoria Fruitgrowers Association, Agriculture Victoria and Primary Industries South Australia. 8th Ed., $20. Detailed information on how to deal with each pest and integrated pest management; Malipatil, M., Medhurst, A.K., Bates, V.I. and Williams, D.G., **Pests of Pome and Stone Fruit and their Predators and Parasitoids: A Pocket Guide,** Agriculture Victoria, $25. Pocket book with colour illustrations enabling identification of immature and adult insects, pests and beneficials, calendars showing seasonal occurrence. Reviewed in *National Market Place News,* February 1997 and *Southern Farmer* Jan. 1997. [er. K.Dunn]

Collections received. The Peter Kelly Collection. *ANIC News* (Newsletter of the Australian National Insect Collection, CSIRO) No. 9, October 1996, pp. 3-4. Peter Kelly's collection of paropsines (Coleoptera: Chrysomelidae) donated to ANIC: "the most comprehensive collection yet assembled of this difficult group". 6500 pinned adults in a 19 drawer wooden cabinet, 1800 tubes of immature stages, 1000+ colour slides, 17 ring binders of host plant, life history and ENTRECS distribution data and indexes linking the adults with the immatures and the photos, largely overcoming the problems created when the colours of adults fade after death. Brief biography of P. Kelly. [er. ANIC]

Sands, D.P.A., Miller, C.G. and Kerr, J.F.R., 1997. **A new species of *Acrodipsas* Sands (Lepidoptera: Lycaenidae) from inland New South Wales and Southern Queensland.** *Journal of the Australian Entomological Society* 36: 19-23. A new ant-blue, *A. mortoni,* named after Mr D.E.A.(Tony) Morton, long-time member of the ESV, who collected the first specimens west of Mullaley NSW in 1985. [er. I.Endersby]

Thwaites, T., 1996. **Sweet tooth.** *Ecos* 87 (Autumn) pp. 6-11. Feeding by adult fruit-piercing moths (*Othreis* spp. and others, Noctuidae) allows the entry of microbes and other organisms into the fruit and can result in devastation of subtropical and tropical orchard crops in Australia. CSIRO has studied control methods including lures and potential for biological control. It is proposed that two parasitic wasps, *Telenomus* and *Ooencyrtus* be introduced.

Hawkeswood, T.J., 1993. **A list and notes on some Buprestidae (Coleoptera) from the Armidale area, New South Wales, Australia.** *Giornale Italiano di Entomologia* 6:437-447. 20 spp. in 6 genera; notes on occurrence and adult host plants. [er. T.Hawkeswood]

Hawkeswood, T.J., Turner, J.R. and LeBreton, M., 1994. **The biology and host plants of the Australian weevil *Rhinotia haemoptera* Kirby (Insecta, Coleoptera, Belidae).** *Spixiana* 17(3): 237-245. [er. T.Hawkeswood].

Turner, J.R. and Hawkeswood, T.J., 1994. **Observations on some Buprestidae (Coleoptera) from the Kanangra-Boyd area, New South Wales, Australia.** *G.it.Ent.* 7: 41-48. 43 spp., mostly feeding on *Leptospermum morrisonii* as adults. Colour paintings by Turner of *Stigmodera kanangara* and *S.bella*. [er. T.Hawkeswood].

Hawkeswood, T.J., 1993. **Review of the biology, host plants and immature stages of the Australian Cerambycidae. Part 2. Cerambycinae (Tribes Oemini, Cerambycini, Heperophanini, Callidiopini, Neostenini, Aphanasiini, Phlyctaenodini, Tessarommatini and Piesarthrini).** *Giornale Italiano di Entomologia* 6: 313-355. 31 genera and 65 spp. reviewed

in detail from published literature. Discussion of host plant relationships and co-evolutionary associations. [cr. T.Hawkeswood]

Turner, J.R. and Hawkeswood, T.J., 1994. A record of *Temognatha (Temognatha) vitticollis* (Macleay) (Coleoptera: Buprestidae) from Penrith, New South Wales, Australia. *Jewel Beetles* (Kittyo-Kai Society, Tokyo, Japan) No 3. [cr. T.Hawkesood]

Douglas, F., 1995. Recovery plan for threatened diurnal Lepidoptera in western Victoria Part 2: Family Lycaenidae. Department of Conservation and Natural Resources. (Not seen).

Thanks to Karen Green, Ian Endersby, Trevor Hawkeswood, Kelvyn Dunn, ANIC for contributions.

Please forward material suitable for inclusion in "Recent Articles of Interest" to the compiler at 16 Nabilla Avenue, Seaford, Vic., 3198.

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- Integrated pest management
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- Taxonomy

Papers have been invited both for insect and non-invertebrate species.

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The logo for the Melbourne Conference is the eyes of *Hemiphlebia mirabilis*, a tiny metallic green damselfly which is the only member of the superfamily Hemiphlebioidea. The species was known originally only from a restricted site at Alexandra, Victoria and was considered a Victorian endemic. It was feared to be extinct, but extant populations have now been recorded from Victoria, Tasmania and Flinders Island.

FURTHER INFORMATION

Nancy Endersby
c/- Institute for Horticultural Development
Private Bag 15
South Eastern Mail Centre VIC 3176

Tel.: (03) 9210 9222
Fax : (03) 9800 3521
E-mail: endersbyn@knoxy.agvic.gov.au

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DIARY OF COMING EVENTS

Friday 18 April General Meeting
Pat & Mike Coupar will present a talk on "Raising Butterflies and Moths:

Friday 16 May Council Meeting

Friday 20 June Annual General Meeting
Presidential Address: "The Romance of Insects in European Art"

Friday 18 July Council Meeting

8 pm Friday 15 August General Meeting & Excursion to view the "Victorian Agricultural Insect Collection" and facilities for the Rearing of Biocontrol Agents. At the Institute for Horticultural Development, 621 Burwood Highway, Knoxfield.

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